

Appl. No. 10/749,028
Amdt. dated August 10, 2005
Reply to Office Action of May 10, 2005

REMARKS/ARGUMENTS

Introduction:

Claims 2, 4, 5, 10, 13, 17-22, and 37 are amended, and claims 3, 7, and 24-36 are now or were previously canceled. In addition, claims 39-49 are new. Claims 2, 4-6, 8-23, and 37-49 are now pending in the application. The specification is also amended. Applicants respectfully request reexamination and reconsideration of the application.

Applicants note that claims 4, 5, 10, 13, 18-22, and 37 are not amended for reasons of patentability. Rather, claims 10 and 13 are amended to correct typographical errors and claims 4, 5, 18-22, and 37 are amended to change dependency or otherwise make those claims consistent with amendments to other claims.

Allowable Subject Matter:

Applicants acknowledge with appreciation the Examiner's indication that claims 3-6 contain allowable subject matter. Claim 2 has been amended to include the requirements of claim 3. Consequently, claim 2 and claims 4-6, 8-16, and 37—all of which depend from claim 1—should clearly be in condition for allowance. As discussed below, claim 17 has been amended to include the "unsingulated wafer" feature of allowed claim 3, which Applicants believe also puts independent claim 17 and its dependent claims—claims 18-23 and 38-49—in condition for allowance.

Objections And Rejections Based On The Disclosure:

The specification was objected to because the "term 'unsingulated' is not seen." Applicants note that the term "not singulated" appears on page 26, lines 13-14 of the specification. Moreover, as requested by the Examiner, Applicants have amended the specification to indicate that wafer 908 in Figure 9 may be, but is not required to be, an unsingulated wafer. (The above-mentioned specification term "not singulated" and the depiction shown in Figure 9 support the foregoing amendment to the specification.) Applicants therefore believe that the objection to the specification is overcome.

Claim 13 was objected to as containing a term lacking antecedent basis. Claim 13 has been amended to address the Examiner's concern, which should overcome the objection.

Appl. No. 10/749,028
Amdt. dated August 10, 2005
Reply to Office Action of May 10, 2005

The specification and drawings were objected to as allegedly not adequately illustrating and enabling claims 9, 10, and 19. In addition, claims 9, 10, and 19 were rejected under 35 USC 112, 1st paragraph for lack of enablement. Applicants respectfully traverse these objections and rejections.

Claim 9 depends from claim 2, and claim 10 depends from claim 9. The specification and drawings fully illustrate, support, and enable each of claims 2, 9, and 10.

For example (and not by way of limitation), Figures 8B and 8C fully illustrate claim 2 as well as claims 9 and 10. Wafer 802 is a nonlimiting example of "a plurality of semiconductor devices, each comprising a plurality of elongate, spring connection elements." Interconnection substrate 808 is a nonlimiting example of a "support substrate."

The specification expressly states that the concepts discussed with regard to other figures (e.g., Figures 5A through 7B) are extended to Figures 8, 8A, 8B, and 8C. (Specification pg. 25, line 33 to pg. 26, line 2.) As thus expressly stated in the specification, the socket substrate 608, sockets 606, and traces 612 shown in Figure 6 may be utilized in the embodiment of Figure 8B and thus provide nonlimiting examples of the socket substrates, sockets, and traces, respectively, recited in claim 2. Likewise, bond wires 614 and pogo pins 620 of Figure 6 provide nonlimiting examples of the "means for electrically connecting ones of said traces with ones of said terminals" and the "test connection means," respectively, of claim 2.

The specification describes a "chuck" as a nonlimiting example of a structure for holding an electronic component (e.g., dies of a wafer) against a socket substrate. (Specification pg. 24, lines 29-31.) Thus, either or both of thermal chucks 812', 814' are nonlimiting examples of the "means for pressing" of claim 2.

The specification also describes Figure 8C as useable with the socket substrate 804' of Figure 8B. (Specification pg. 27, lines 3-6.) Power lines 822, 824 are nonlimiting examples of power being provided to the semiconductor devices as recited in claim 9, and either or both of thermal chucks 812', 814'—which are described in the specification as controlling a temperature of the dies of wafer 802 (specification pg. 27, lines 1-2)—are nonlimiting examples of the temperature control device of claim 9.

In addition, thermal chuck 812' is shown in Figure 8B in contact with wafer 802 and is thus a nonlimiting example of the "first thermal chuck" of claim 10. Similarly, thermal chuck

Appl. No. 10/749,028
Amdt. dated August 10, 2005
Reply to Office Action of May 10, 2005

814' is shown in Figure 8B in contact with socket substrate 804' and is thus a nonlimiting example of the "second thermal chuck" of claim 10.

The specification and the drawings thus fully illustrate, support, and enable claims 2, 9, and 10. In like manner, the specification and drawings fully illustrate, support, and enable claim 19, which depends from independent claim 17. Applicants therefore respectfully request that the objections to the specification and drawings and the rejection of claims 9, 10, and 19 under 35 USC 112, 1st paragraph be withdrawn.

Rejections Based On Prior Art:

Claims 17, 18, 20, 21, and 23 were rejected under 35 USC 102(c) as anticipated by US Patent No. 6,018,249 to Akram ("Akram"). In addition, claims 18, 22, 23, and 38 were rejected under 35 USC 103(a) as obvious in view of Akram, and claims 2, 78, 8, 11, 12, 14, 15, 17-19, 22-23, 37, and 38 were rejected as obvious in view of Akram in combination with one or more of US Patent No. 5,366,380 to Raymond ("Raymond"), US Patent No. 6,031,282 to Jones ("Jones"), US Patent No. 5,495,667 to Farnworth ("Farnworth"), and/or US Patent No. 4,922,376 to Pommer ("Pommer"). Applicants respectfully traverse these rejections.

As discussed above, claim 3 was identified in the Office Action as containing allowable subject matter, and claim 2 has been rewritten to include all of the features of claim 3. Claim 2 and claims 4-6, 8-16, and 37, all of which depend from claim 2, should therefore be in condition for allowance.

Independent claim 17 has been amended to include the unsingulated wafer requirement of claim 3. As was recognized in the Office Action, none of the prior art of record teaches or suggests a socket apparatus configured to contact dies that have elongate spring connection elements and are part of an unsingulated wafer, and in fact, such a socket apparatus provides advantages not found in the prior art and is an improvement over the prior art. Independent claim 17 is therefore also patentable over the prior art of record.

Claims 18-23 and 38-52 depend from claim 17 and are therefore also patentable over the prior art of record.

Appl. No. 10/749,028
Amdt. dated August 10, 2005
Reply to Office Action of May 10, 2005

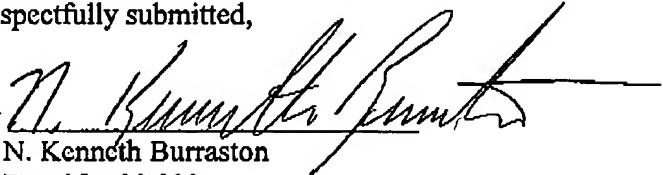
Conclusion:

In view of the foregoing, Applicants submit that all of the claims are allowable and the application is in condition for allowance. If the Examiner believes that a discussion with Applicants' attorney would be helpful, the Examiner is invited to contact the undersigned at (801) 323-5934.

Respectfully submitted,

Date: August 10, 2005

By


N. Kenneth Burraston
Reg. No. 39,923

Kirton & McConkie
1800 Eagle Gate Tower
60 East South Temple
P.O. Box 45120
Salt Lake City, Utah 84111-1004
Telephone: (801) 323-5934
Fax: (801) 321-4893